SUMup Snow Density Dataset readme

1.0 Introduction

This snow density dataset was compiled by the Surface mass balance and snow on sea ice working group (SUMup). This dataset includes snow density measurements over both the ice sheets, ice caps and snow on sea ice. It excludes seasonal snow on land measurements. This dataset is a community effort to distribute easy to use in-situ data to improve surface mass balance modeling and remote sensing efforts. This dataset is a compilation of work from many individual researchers. When using this dataset please cite **both** the individual researchers who provided the data as listed in the Citation Key below as well as the dataset. For questions about the dataset or to contribute your data to the dataset please contact the lead dataset compiler Lora Koenig lora.s.koenig@nasa.gov.

2.0 Contributing to the dataset

If you would like to contribute to the dataset please enter your data into the SUMup_data_templates.xlsx file under the Density tab.

For no data enter -9999 otherwise fill in the columns as follows:

Date Taken- enter the year and day the data was taken in format YYYYMMDD.

Lat-Latitude of measurements in decimal degrees (N is positive S is negative).

Long- Longitude of measurement in decimal degrees (E is positive W is negative).

Start depth- the start depth of the measurement in m from the snow/air interface (snow surface).

Stop depth- the stop depth of the measurement in m form the /air interface (snow surface).

Density- snow density measurement in kg/m-3.

Error- 1 sigma error on density measurement.

Elevation- the surface elevation of the location in m.

SDOS flag- snow depth on sea ice flag. If the density measurement was taken simultaneously with a snow depth on sea ice measurement contained in the SUMup Snow Depth on Sea Ice dataset enter 1. If not enter 0.

Method- see method key for snow density measurements below for numeric value of method used. If a method was used not listed in the key please add the method to the key with the next highest number.

Citation- see citation key for snow density measurements below for numeric value of citation. If it is a new citation please add the citation to the key and assign the next highest number.

If you cannot enter your data into the SUMup template and would still like to contribute it please e-mail the data in its current form to lora.s.koenig@nasa.gov and the data will be reformatted and added as resources allow.

3.0 Format

The dataset is in tab delaminated text files and excel spread sheets. With the following columns, described in more detail in section 2.0. Date Taken, Lat, Long, Start depth, Stop depth, Density in kg/m-3, Error on density measurement, Elevation of surface in m, SDOS flag, method, citation.

No data value is -9999.

4.0 Method Key

1. 1000 cc density cutter
2. 250 cc density cutter
3. 100 cc density cutter
4. Ice core section
5. Neutron density probe

5.0 Citations

When using this dataset please cite **both** the individual researchers who provided the data as listed in the Citation Key below as well as the dataset.

Surface mass balance and snow on sea ice working group (SUMup) (date accessed). SUMup Snow Density Dataset. Greenbelt, MD, USA: NASA Goddard Space Flight Center. Digital media.

5.1 Citations Key

1. Koenig, L.S. and Rupper, S. Satellite era accumulation traverse density data. Unpublished data.

6.0 Acknowledgement

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